



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

Feb 17, 2005

In Reply Refer To: WTR-7

Jim Vierra, Owner
Component Finishing
800 Aldo Avenue
Santa Clara, California 95054-2257

Dear Mr. Vierra:

Enclosed is the report for EPA's August 6, 2004 compliance evaluation inspection of Component Finishing. We request that you submit a short response to each specific finding in the numbered items 2.0 - 5.0 of this report by March 30, 2005.

The main findings are summarized below:

- 1 The San Jose/Santa Clara permit did not apply the correct Federal standards for metal finishing. The permit correctly applied local limits. The Federal cyanide standards also will have to be adjusted to account for dilution from non-cyanide bearing waste-waters.
- 2 Neither iron phosphating or non-chromate conversion coating are expected to generate the regulated pollutants at the levels anticipated to require treatment equivalent in design to the best-available-technology models used in setting the Federal standards. As a result, on-site treatment performs nearly as well as the models.
- 3 The on-site treatment would perform more efficiently if operated always in batch mode and if all return waste streams were directed to the under floor pit.
- 4 There were a number of potential methods of unauthorized bypassing of treatment as well as of the permitted compliance sampling point.

We thank you for your cooperation during our inspection. Please send copies of any submittal to the San Jose/Santa Clara as well as to us. If you have any questions, please feel free to contact me at (415) 972-3504 or by e-mail at arthur.greg@epa.gov.

Sincerely yours,

Original signed by:
Greg V. Arthur

Greg V. Arthur, Envr. Engr.
CWA Compliance Office

Enclosure

cc: Kort Jackson, San Jose/Santa Clara



U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION 9

CLEAN WATER ACT COMPLIANCE OFFICE

NPDES COMPLIANCE EVALUATION INSPECTION REPORT

Industrial User: Component Finishing
800 Aldo Avenue, Santa Clara, California 95054-2257
Metal Finishing (40 CFR 433)

Treatment Works: San Jose/Santa Clara Water Pollution Control Plant
(NPDES Permit CA0037842)

Dates of Inspection: August 5, 2004

Inspection Participants:

US EPA: Greg V. Arthur, CWA Compliance Office, (415) 972-3504
Meg Masquelier, CWA Compliance Office, (415) 972-3536

RWQCB: No Representative

City of San Jose: Kort Jackson, Industrial Waste Inspector, (408) 945-5474
Phil McGinnis, Industrial Waste Supervisor, (408) 945-3007

Component Finishing: David Condro, General Manager, (408) 988-6233
Jim Vierra, Owner, (408) 988-6233

Report Prepared By: Greg V. Arthur, Environmental Engineer
January 15, 2005

Section 1

Introduction and Background

1.0 Scope and Purpose

On August 5, 2004, EPA conducted a compliance evaluation inspection of Component Finishing in Santa Clara. The purpose was to ensure compliance with the Federal regulations covering the discharge of non-domestic wastewaters into the sewers, in particular to ensure:

- Classification in the proper Federal categories;
- Application of the correct standards at the correct points;
- Consistent compliance with the standards; and
- Fulfillment of Federal self-monitoring requirements.

Component Finishing is one of 13 significant industrial users (“SIUs”) in San Jose/Santa Clara Water Pollution Control Plant service area whose compliance was assessed as part of EPA’s 2004 evaluation of the San Jose/Santa Clara pretreatment program. San Jose/Santa Clara received a report prepared by Tetra Tech, the State of California’s contractor. The industrial users received or will receive individual reports from EPA. The inspection participants are listed on the title page. Masquelier conducted the inspection on August 5.

1.1 Process Description

Component Finishing is a job-shop powder coating shop operating in two connected units at 800 Aldo Avenue in Santa Clara. Component Finishing performs iron phosphating on iron and non-chromate conversion coating on aluminum prior to dry-booth powder coating.

Iron Phosphate Coating Line

Tank 1 – 800 gal alkaline cleaning
Tank 2 – 800 gal alkaline cleaning
Tank 3 – 800 gal overflow rinse for T2
Tank 4 – 800 gal spray rinse for T3
Tank 5 – 800 gal iron phosphating

Non-Chromate Conversion Coating Line

Tank 6 – 300 gal alkaline soap
Tank 7 – 300 gal overflow rinse for T6
Tank 8 – 300 gal HPO₄/HF acid etching
Tank 9 – 300 gal static rinse for T8
Tank 10 – 300 gal non-Cr conversion coating
Tank 11 – 300 gal spray rinse for T10
Tank 12 – 300 gal spray rinse for T10

According to the owner, the operations began in 1974. The phosphating and conversion coating lines were relocated from one side of the shop to the other after the installation of secondary containment in 1984. A large alodining line was removed in 1987. On the date of this inspection, Tanks 1, 10, 11, and 12 were found to be empty and not in use. Component Finishing does not own the parts it powder coats.

Section 1 – Introduction and Background

1.2 Waste Streams

Spent Solutions - The imparted contamination from the processing of parts and the progressive drop in solution strength usually results in the generation of spent solutions. At Component Finishing, every metals processing step (alkaline cleaning in Tank 2, iron phosphating in Tank 5, alkaline soap in Tank 6, acid etching in Tank 8) generates spent solutions. In addition, the alkaline cleaning step also produces sludge from the in-tank precipitation of solids. Component Finishing treats all solution spends on-site.

Rinses – Component Finishing employs a three types of rinsing. First, a first-stage static rinse in Tank 9 follows acid etching. Second, first-stage on-demand overflow rinses in Tanks 3 and 7 follow alkaline cleaning and alkaline soap. Finally, a second-stage spray rinse in Tank 4 follows the overflow rinse for alkaline cleaning. The two unused Tanks 11 and 12 are for first-stage spray rinses following non-chromate conversion coating.

Residuals – Component Finishing generates sludges from the in-tank precipitation of solids in the alkaline cleaning and alkaline soap steps in Tanks 2 and 6, as well as from the industrial wastewater treatment unit clarifiers.

1.3 Wastewater and Waste Handling

Process wastewaters discharge into the sewers through one identified sewer inlet designated in this report as IWD-1. All wastewaters discharged to the sewers can be treated through the industrial wastewater treatment unit (“IWT”). See Photo Nos. 1, 2, 3 and 4 on pages 4 and 5. Also see Appendix 1 for a schematic of wastewater handling.

Treatment – Each of the overflow rinses and solution spends drain by hard pipe to an under-floor pit that feeds by pump and semi-flexible pipe to the IWT. Static rinse spends are delivered by portable pump and hose to the under-floor pit. Any spills within the secondary containment are delivered by portable pump and hose to the IWT. The IWT consists of a filter press, and two three-stage clarifiers that can be operated in either series or parallel. Both clarifiers can operate in a batch mode and both can discharge to the sewers. The second clarifier is used to batch adjust pH and can return wastewaters to the under-floor pit. Residuals are dewatered through a filter press with the filtrate returned to the under-floor pit. The owner reports that filter press cake was off-hauled in 1999 and 2004. In essence, treatment consists entirely of un-aided settling, batch pH adjustment, and solids dewatering.

Sewer Discharge – Outlet lines from both the first and second clarifiers join together to feed into the sewer discharge line. The outlet from the first clarifier is plugged with a removable soft plug. The outlet line from the second clarifier first passes through a small final metering tank, which serves as the compliance sampling point, IWD-1. The sewer discharge line proceeds under the floor, past the secondary containment, and out of the building to the municipal sewers. The semi-flexible inlet pipe from the under-floor pit can be moved from the first clarifier to the second clarifier or to the final metering tank.

Section 1 – Introduction and Background



Photo No.1 – Portable Pumps and Hoses

The hoses are long enough to reach from any part of the metal finishing line to any other part of the shop.



Photo No.2 – Sewer Vent Inlet

A sewer vent pipe emerges from the concrete floor to the roof, outside of the secondary containment, where a bathroom connection used to exist. The sewer vent pipe is rusted through at floor level. It was easily displaced to the side thereby exposing an inlet to the sewer discharge line downstream of IWD-1.

Section 1 – Introduction and Background



Photo No.3 – Soft Plug in Clarifier 1

Removal of this plug from clarifier 1 allows the clarifier contents to bypass pH adjustment in clarifier 2 as well as the compliance sampling point, IWD-1.



Photo No.4 – Final Metering Tank

This small tank follows clarifier 2 and serves as the final compliance sampling point, IWD-1

1.4 Wastewater Discharge Permitting

San Jose/Santa Clara issued permit No. SC-002B to Component Finishing authorizing the discharge of process wastewaters to the sewers through one sewer inlet. The sample point is the final metering tank located next to the second clarifiers referred to in this report as IWD-1. The permit sets limits and self-monitoring requirements for IWD-1. The permit also specifies sampling protocols and includes the general provisions of the Santa Clara City Code (§23-1 et seq.) that apply to all non-domestic discharges to the Santa Clara sewers.

Section 2

Sewer Discharge Standards and Limits

Federal categorical pretreatment standards (where they exist), national prohibitions, and the local limits (where they exist) must be applied to the sewered discharges from industrial users. 40 CFR 403.5 and 403.6.

2.0 Summary

The Federal metal finishing standards, national prohibitions, and local limits apply to IWD-1. The San Jose/Santa Clara permit misapplied the Federal job-shop electroplating standards but appropriately applied the local limits. See Appendix 2 for the discharge requirements.

Requirements

- The permit must apply the Federal standards for metal finishing.
- Source(s) of cyanide must be identified and the proportion of the total discharge from cyanide-bearing sources determined in order to properly apply the Federal standards.

Recommendations

- Analytical interferences should be evaluated if there are no discernable cyanide sources.

2.1 Classification by Federal Point Source Category

Component Finishing qualifies as a metal finisher subject to the Federal standards in 40 CFR 433. The facility does not qualify as a job-shop electroplater subject to the Federal standards in 40 CFR 413 because all of the metal finishing lines were moved and reinstalled after promulgation of the metal finishing rule. Federal standards are self-implementing which means they apply to regulated waste streams even if they are not implemented in a permit.

2.2 Local Limits and National Prohibitions

Local limits and the national prohibitions are meant to express the limitations on non-domestic discharges necessary to protect the sewers, treatment plants and their receiving waters from adverse impacts. In particular, they prohibit discharges that can cause the pass-through of pollutants into the receiving waters or into reuse, the operational interference of the sewage treatment works, the contamination of the sewage sludge, sewer worker health and safety risks, fire or explosive risks, and corrosive damage to the sewers. The national

Section 2 – Sewer Discharge Standards and Limits

prohibitions apply nationwide to all non-domestic sewer discharges. The San Jose local limits apply to non-domestic discharges in the San Jose/Santa Clara service area.

2.3 Federal Categorical Pretreatment Standards Metal Finishing - 40 CFR 433

Applicability - Under 40 CFR 433.10(a), the metal finishing standards apply to the process wastewaters from all of the metal finishing lines and from the powder coating operations because they involve chemical coating (phosphating, non-chromate conversion coating), and etching (acid etching). The metal finishing standards "... apply to plants that perform ..." the core operations of electroplating, electroless plating, etching, anodizing, chemical coating, or printed circuit board manufacturing and they extend to other on-site operations, such as cleaning (alkaline soap, alkaline cleaning), and painting (powder coating), associated with metal finishing and specifically listed in 40 CFR 433.10(a). If any of the core operations are performed, the standards apply to discharges from any of the core or associated operations. As a result, the metal finishing standards apply to the entire process-related discharge from Component Finishing to IWD-1.

The Federal job-shop electroplating standards in 40 CFR 413 do not apply. They apply only to existing source job-shop metal finishers, which are those that own less than 50% of the parts processed and were in operation in their present configuration before the August 31, 1982 promulgation date of the proposed Federal rule for metal finishing. Component Finishing owns less than 50% of the parts processed. However, under the definitions in 40 CFR 403.3(k), a new process constructed at an existing source after August 31, 1982 is a new source (1) if it entirely replaces a process which caused a discharge from an existing source or (2) if it is substantially independent of the existing sources on-site. This definition means the new source standards apply to new lines, rebuilt or moved lines, or existing lines converted to do new operations. In every case, the change in configuration provides the opportunity to install the best-available-technology ("BAT") treatment for new sources.

Standards - The standards for new sources in 40 CFR 433.17 for the metal finishing wastewater discharges at Component Finishing to the sewers follow below.

New Source ("psns") Standards from 40 CFR 433.17

| (in mg/l) | Cd | Cr | Cu | Pb | Ni | Ag | Zn | CN(t) | CN(a) | TTO |
|-----------|------|------|------|------|------|------|------|-------|-------|------|
| Daily-Max | 0.11 | 2.77 | 3.38 | 0.69 | 3.98 | 0.43 | 2.61 | 1.20 | 0.86 | 2.13 |
| Month-Avg | 0.07 | 1.71 | 2.07 | 0.43 | 2.38 | 0.24 | 1.48 | 0.65 | 0.32 | - |

Basis of the Standards - The new source metal finishing standards were based on a model pretreatment unit that comprises metals precipitation, settling, sludge removal, source control of toxic organics, no discharge of cadmium-bearing wastewaters, and if necessary, cyanide destruction and chromium reduction. The BAT standards were set where metal finishers with model treatment operated at a long-term average and variability that achieved a compliance rate of 99% (1 in 100 chance of violation).

Section 2 – Sewer Discharge Standards and Limits

Adjustments – The Federal standards at IWD-1 do not have to be adjusted to account for dilution or multiple Federal categories because all of the wastewaters through this point qualify as regulated under the metal finishing rule. However, for cyanide, under 40 CFR 433.12(c), the standards must be adjusted to account for dilution from non-cyanide bearing waste streams (regulated and unregulated). Unadjusted standards can apply at an as-of-yet unidentified sample point to just cyanide-bearing flows. Unadjusted standards also apply by default to facilities without cyanide-bearing waste streams. It could not be determined if there are cyanide-bearing waste streams, even though cyanide was detected, since Component Finishing does not perform cyanide-based plating, conversion coating, or stripping.

Compliance Deadline - New sources were required to comply on the first day of discharge. All discharges were from the relocated metal finishing lines after 1984.

2.5 Point(s) of Compliance

Federal categorical standards apply end-of-process-after-treatment to all Federally-regulated flows at IWD-1. Local limits and national prohibitions apply end-of-pipe to all non-domestic flows from Component Finishing at IWD-1.

2.6 Compliance Sampling

Federal standards are daily-maximums and are comparable to 24-hour composite samples collected either manually or automatically to be representative of the sampling day's operations. At IWD-1, the Federal standards are comparable to grab samples when the batches are discharged. Local limits and the national prohibitions are instantaneous-maximums and are comparable to samples of any length including single grab samples.

2.7 Pollutants of Concern

The permit appropriately advances local limits and self-monitoring requirements for cadmium, chromium, copper, lead, nickel, silver, zinc, toxic organics and total cyanide, since these pollutants are either Federally-regulated or the wastewater discharges include them and San Jose/Santa Clara is regulated for them by its NPDES permit and the Federal sludge standards. The permit also appropriately advances local limits for pH since the discharges through IWD-1 include alkaline, and acidic wastewaters. The permit advances local limits without self-monitoring for antimony, arsenic, beryllium, manganese, mercury, oil & grease, phenol & derivatives, selenium, and xylene. Oil & grease could be a pollutant of concern since it could be present in the discharge from alkaline cleaning.

Section 3

Compliance with Federal Standards

Industrial users must comply with the Federal categorical pretreatment standards that apply to their process wastewater discharges. 40 CFR 403.6(b).

Categorical industrial users must comply with the prohibition against dilution of the Federally-regulated waste streams as a substitute for treatment. 40 CFR 403.6(d).

Industrial users must comply with the provision restricting the bypass of treatment necessary to comply with any pretreatment standard or requirement. 40 CFR 403.17(d).

3.0 Summary

The treatment in-place does not equal in design the BAT model used in setting Federal standards. It performs nearly as well as the model because non-chromate conversion coating and iron phosphating do not generate the regulated pollutants at significant levels. Most samples were in compliance. One zinc violation went unidentified because of wrong standards in the permit. There is no evidence of dilution as a substitute for treatment. There is a potential to bypass both treatment and IWD-1. See Appendix 3 for a sampling summary for IWD-1.

Requirements

- The IWT must provide metals precipitation and settling or the sources of zinc must be
- All sewer clean-outs, sewer vents or any other inlets to the discharge line from the final metering tank must be permanently capped or sealed.

Recommendations

- The IWT should always be operated in batch mode.
- The flexible hose from the under floor pit should be replaced with hard pipe and valving so that there is no potential for an unauthorized bypass of treatment.
- Filter press filtrate returns and secondary containment spills should all be directed to the under floor pit for full treatment.
-

Section 3 – Compliance with Federal Standards

3.1 Sampling Records

The 2002-2004 sample record for Component Finishing consists of representative sampling from IWD-1 for all of the Federally-regulated pollutants. Self-monitoring is semiannually for metals and cyanide with semiannual self-certifications for toxic organics. San Jose/Santa Clara monitors twice per year for all of these pollutants as well as for toxic organics. All samples from IWD-1 appear to be usable for determining compliance with the Federal standards. Monthly averages were based on single samples since there was never more than one sample (self-monitoring and San Jose/Santa Clara) collected in any one month. See sections 2.5, 2.6 and 5.0 regarding the use of sample results for IWD-1.

3.2 Compliance at IWD-1

Metals - Consistent compliance with the Federal standards for metals at IWD-1 would not be expected because the batch clarifier tanks does not equal in design the BAT model used in setting the standards. In particular, the clarifiers do not provide precipitation of dissolved metals. However, eight of nine samples (89%) complied with Federal standards for metals because non-chromium conversion coating and iron phosphating, in contrast to alodining and zinc phosphating, do not involve solutions using the regulated metals at high concentrations. Instead, alloys in the parts themselves removed at low concentrations through etching or cleaning are the more likely sources of the regulated metals in the discharges. The violation was of the monthly-average standard for zinc. The averages and calculated 99th% peaks for the regulated metals are all low enough to result in a negligible <1% chance of exceeding the daily-maximum standards. The same statistics applied to averages based on single samples results in a 10% chance of exceeding monthly-average standards.

Toxic Organics – Consistent compliance with the Federal standard for toxic organics is expected because all samples (100%) were in compliance and the average and calculated 99th% peak for concentrations are low enough to result in a negligible <1% chance of exceeding the standards. A number of the regulated toxic organics listed in 40 CFR 433.11(e) were detected. Methylene chloride is the active ingredient in an aircraft parts paint remover reported in the permit application as present. The cleaning of oily parts would be the likely source of phenol, nitrobenzene, bis(2-chloroethoxy)methane, dimethyl phthalate, diethyl phthalate, bis(2-ethylhexyl)phthalate, and di-n-octyl phthalate. See Appendix 4 for the list of the regulated toxic organics.

Cyanide – Consistent compliance with the Federal standards for cyanide would be expected because there are no cyanide-bearing solutions identified on-site. Nevertheless, cyanide was detected in three of eight samples (38%), which means that either there are cyanide sources or there is an analytical interference with the cyanide test. See sections 2.0 and 2.4 regarding the establishment of Federal metal finishing standards for cyanide at IWD-1.

Section 3 – Compliance with Federal Standards

3.3 Dilution as a Substitute for Treatment

The Federal standards in 40 CFR 403.6(d) prohibit "dilution as a substitute for treatment" in order to prevent compromising the BAT model treatment with dilute waste streams. In particular, this prohibition applies when samples of a diluted waste stream are found to be below the Federal standards and the apparent compliance is used to justify a discharge without treatment. There are two conditions that need to be established in order to make a determination of non-compliance with the prohibition against dilution as a substitute for treatment. First, some or all of the Federally-regulated wastewaters must discharge without undergoing BAT model treatment or its equivalent. Second, there must be some form of excess water usage within a Federally-regulated process.

There is no evidence of "dilution as a substitute for treatment" because there was no excess water usage apparent on-site.

3.4 Bypass Provision

The Federal standards in 40 CFR 403.17 prohibit the bypassing of any on-site treatment necessary to comply with standards unless the bypass was unavoidable to prevent the loss of life, injury, or property damage, and there were no feasible alternatives. This provision explicitly prohibits bypasses that are the result of a short-sighted lack of back-up equipment for normal downtimes or preventive maintenance. It also explicitly prohibits bypasses that could be prevented through wastewater retention or the procurement of auxiliary equipment. It specifically allows bypasses that do not result in violations of the standards as long as there is prior notice and approval from the sewerage agency or State.

The discharge of process wastewaters to inlets into the sewer discharge line, as well as the diversion of the flexible inlet pipe to the final metering tank, would both constitute bypassing of treatment necessary to comply. The possibility exists because portable pumps and hoses are used to deliver all wastewaters to the IWTs. There are no built-in preventions designed to preclude the unauthorized delivery of wastewaters to the final metering tank or to inlets into the sewer discharge line downstream of treatment. See Photo Nos. 1, 2, and 3 in Section 1.3 of this report.

Section 4

Compliance with Local Limits and National Prohibitions

All non-domestic wastewater discharges to the sewers must comply with local limits and the national prohibitions. 40 CFR 403.5(a,b,d).

Industrial users must comply with the provision restricting the bypass of treatment necessary to comply with any pretreatment standard or requirement. 40 CFR 403.17(d).

4.0 Summary

The discharges always comply with the local limits for the pollutants that are monitored. The strict use of just iron phosphating and non-chromate conversion coating should continue to result in consistent compliance. See Appendix 3 for a sampling summary for IWD-1.

Requirements

- None.

Recommendations

- The IWT should be retrofitted and operated to ensure that all wastewaters pass through and cannot bypass pH adjustment.

4.1 National Objectives

The general pretreatment regulations were promulgated in order to fulfill the national objectives to prevent the introduction of pollutants that:

- (1) cause operational interference with sewage treatment or sludge disposal,
- (2) pass-through sewage treatment into the receiving waters or sludge,
- (3) are in any way incompatible with the sewerage works, or
- (4) do not improve the opportunities to recycle municipal wastewaters and sludge.

This evaluation did not include an evaluation of whether achievement of the national objectives in 40 CFR 403.2 have been demonstrated by consistent compliance with the sludge and discharge limits at the San Jose/Santa Clara wastewater treatment plant.

Section 4 – Compliance with Local Limits

4.2 Local Limits for Toxic Metals, and Toxic Organics

All nine samples (100%) complied with the local limits for cadmium, chromium, copper, cyanide, lead, nickel, silver, zinc, and toxic organics. Iron phosphating and non-chromate conversion coating would not be expected to generate these pollutants and the second clarifier provides batch pH adjustment. The preparation steps would be expected to generate some of the pollutants through surface etching, oxide removal, and organics removal in preparation for powder coating. There were no sample results for oil & grease. See Section 2.7 of this report.

4.3 Local Limits for Solvents and The National Prohibition Against Flammability

Flammability is not expected to be a risk because of the lack of organic solvents in the waste streams.

4.4 Local Limits for pH and The National Prohibition Against Corrosive Structural Damage

All pH measurements complied with the minimum and maximum local limits for pH. The pH measurements ranged from 6.0 su. to 9.9 su. Wastewaters directed through the flexible hose to the first clarifier or directly to the final metering tank can discharge to the sewers without passing through the second clarifier for pH adjustment. The contents of the first clarifier can discharge directly to the sewer through the removable plug. All batch discharges from the second clarifier after pH adjustment are not expected to pose a risk of causing corrosive structural damage to the San Jose/Santa Clara sewers.

Section 5

Compliance with Federal Monitoring Requirements

Significant industrial users must self-monitor for all regulated parameters at least twice per year unless the sewerage agency monitors in place of self-monitoring. 40 CFR 403.12(e) & 403.12(g).

Each sample must be representative of the sampling day's operations. Sampling must be representative of the conditions occurring during the reporting period. 40 CFR 403.12(g) & 403.12(h).

5.0 Summary

The sample record for IWD-1 satisfies the Federal minimum requirement for Component Finishing to self-monitor twice per year. The sample record also satisfies the requirement for sampling to be representative over the reporting period since there were no intermittent operations not captured by the accumulation through batch treatment and the compliance sampling on any particular day. The only pollutant of concern not evident in the sample record is oil & grease.

The Federal standards allow self-certifications twice per year instead of self-monitoring at IWD-1 for total toxic organics with the submittal of a toxic organics management plan ("TOMP") under 40 CFR 433.12. The TOMP should state that there is no opportunity for toxic organics to be discharged because they are not used on-site, or are physically separated from the sewer system. The TOMP could apply to most but not all of the Federally-regulated toxic organics, thereby limiting the twice-per-year self-monitoring requirement to just those toxic organics present. See Appendix 4 for a list of the Federally-regulated toxic organics.

Requirements

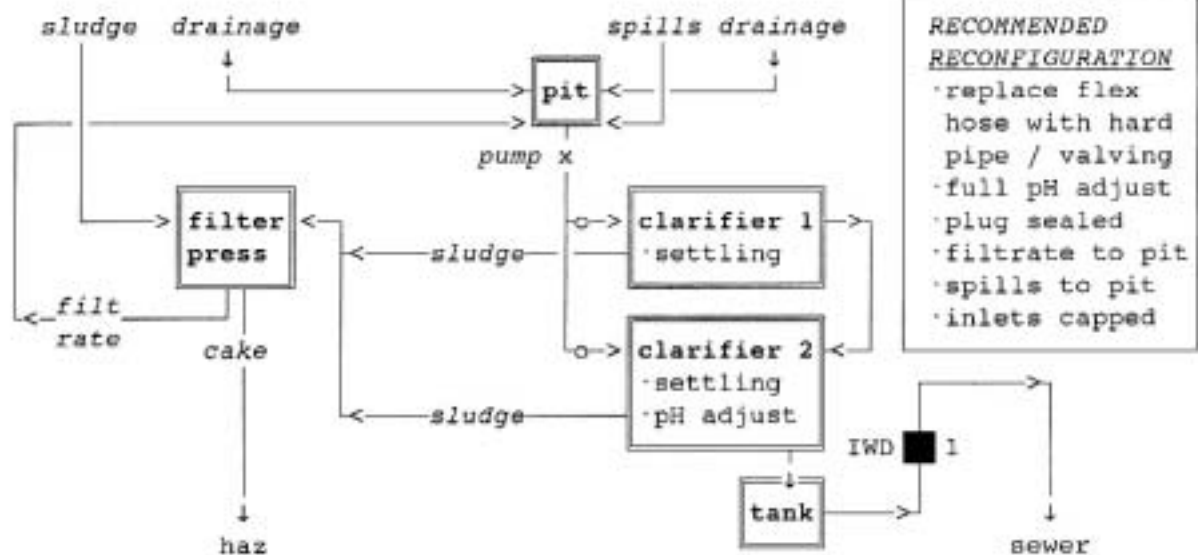
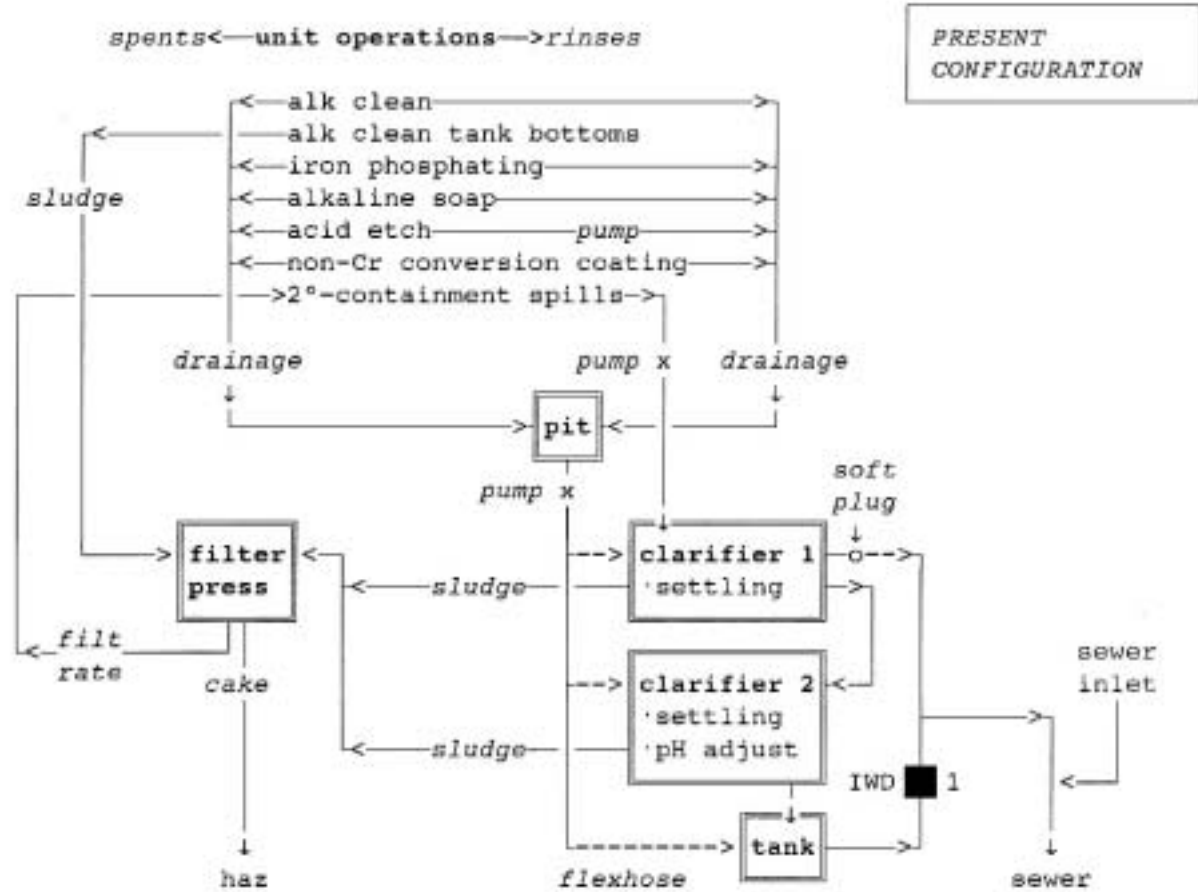
- None.

Recommendations

- Compliance sampling should include oil & grease.
- More than one sample per month should be collected in order to better determine compliance with the Federal monthly-average standard for zinc.
- Grab samples may be collected to determine compliance with Federal standards as long as all wastewaters are batch treated and discharged.

Appendix 1

Component Finishing, Santa Clara, California
Schematic of the Wastewater Collection and Treatment



| Appendix 2 | | | | | | |
|--|-----------------------------|-----------------|-------------------------|---|-------|--------|
| Clean Water Act Requirements - Component Finishing, Santa Clara Sample Station Tank @ IWD-1 | | | | | | |
| Specific Numeric Limits (mg/l) | Fed Cat Stds | | Nat'l Prohib inst | a/ Local Limits | | |
| | d-max | mo-avg | | inst | d-max | yr-avg |
| antimony | - | - | - | 5.0 | - | - |
| arsenic | - | - | - | 1.0 | - | - |
| beryllium | - | - | - | 0.75 | - | - |
| cadmium | 0.11 | 0.07 | - | 0.7 | - | - |
| chromium | 2.77 | 1.71 | - | 1.0 | - | - |
| copper | 3.38 | 2.07 | - | 2.7 | 1.0 | 0.4 |
| lead | 0.69 | 0.43 | - | 0.4 | - | - |
| manganese | - | - | - | 35.0 | - | - |
| mercury | - | - | - | 0.010 | - | - |
| nickel | 3.98 | 2.38 | - | 2.6 | 1.1 | 0.5 |
| selenium | - | - | - | 2.0 | - | - |
| silver | 0.43 | 0.24 | - | 0.7 | - | - |
| zinc | 2.61 | 1.48 | - | 2.6 | - | - |
| cyanide-total | 1.20 b / | 0.65 b / | - | 1.0 | - | - |
| cyanide-amenable | 0.86 b / | 0.32 b / | - | 0.5 | - | - |
| oil+grease | - | - | - | 150. | - | - |
| phenol & derivatives | - | - | - | 30.0 | - | - |
| xylene | - | - | - | 1.5 | - | - |
| total toxic organics | 2.13 c / | - | - | 2.13 | - | - |
| pH min (s.u.) | - | - | 5.0 | 6.0 | - | - |
| pH max (s.u.) | - | - | - | 12.5 | - | - |
| closed cup flashpoint | - | - | ≥140°F | - | - | - |
| Regulatory Citation | 40 CFR 433.17 unadjusted | | 40 CFR 403.5 | Santa Clara City Code Chapter 23.1 et.seq. | | |

a/ National prohibitions and Santa Clara local limits also include narrative prohibitions against pass-through, interference, obstruction, sludge contamination, toxic gases/fumes, fire/explosion hazard, or causing heat >104°F at the municipal wastewater treatment plant

b/ These may have to be adjusted to account for dilution from non-cyanide bearing waste streams, or may be applied unadjusted to just cyanide bearing waste streams, if they exist, at an as-of-yet undetermined sample point for just cyanide.

c/ See Appendix 4 for the list of toxic organic from 40 CFR 433.11(e).

| Appendix 3 | | | | | | | | | |
|--|----------------------|-------|------|---------------------------------|------|------|------|------|--------|
| Discharge Quality at IWD-1 Component Finishing, Santa Clara | | | | | | | | | |
| Pollutants (µg/l) | May-2002 to Jun-2004 | | | Fed Viols <u>a/</u> Local Viols | | | | | Sample |
| | Mean | 99th% | Max | DMax | MoAv | Inst | DMax | YrAv | Count |
| arsenic | | | - | | | | 0/0 | | 0 |
| cadmium | 2 | 9 | 10 | 0/9 | 0/9 | | 0/9 | | 9 |
| chromium | 67 | 378 | 421 | 0/9 | 0/9 | | 0/9 | | 9 |
| copper | 33 | 104 | 84 | 0/9 | 0/9 | | 0/9 | 0/9 | 9 |
| cyanide | 18 | 53 | 40 | 0/7 | 0/7 | | 0/7 | | 7 |
| lead | 12 | 80 | 90 | 0/9 | 0/9 | | 0/9 | | 9 |
| mercury | | | - | | | | 0/0 | | 0 |
| molybdenum | | | - | | | | 0/0 | | 0 |
| nickel | 98 | 310 | 293 | 0/9 | 0/9 | | 0/9 | 0/9 | 9 |
| oil & grease | | | - | | | | 0/0 | | 0 |
| selenium | | | - | | | | 0/0 | | 0 |
| silver | <13 | <13 | <13 | 0/9 | 0/9 | | 0/9 | | 9 |
| TDS | | | - | | | | 0/0 | | 0 |
| tox organics | 186 | 698 | 567 | 0/5 | | | 0/5 | | 5 |
| zinc | 436 | 2365 | 2590 | 0/9 | 1/9 | | 0/9 | | 9 |
| (s.u.) | Median | Min | Max | | | | | | |
| pH | 7.5 | 6.0 | 9.9 | | | | 0/8 | | 8 |

| | | | | | | |
|---|-------------|----------------|--------------------|----------------|-----------|------|
| <u>a/</u> Violations @ Santa Clara Plating (Jul-2002 to Jun-2004) | | | | | | |
| Averages based on all results over the period even if only one result | | | | | | |
| Date | Sampler | Type | Fed Standards | (mg/l) | Violation | Days |
| Mar 2004 | CompFin | 24-h | Zn mo-avg | 1.48 | 2.59 | 31 |
| Computed Statistical Probability of Violation | | | | | | |
| <u>limits</u> | <u>mean</u> | <u>std dev</u> | <u>probability</u> | <u>percent</u> | | |
| Fed-Zn mo-avg | μ = 436.2 | σ = 827.6 | α(1480) = 0.1036 | 10% | | |

Appendix 4

Definition of Total Toxic Organics - 40 CFR 433.11(e)

Total toxic organics is the summation of all quantifiable values greater than 0.010 mg/l for the following toxic organics:

| | | |
|----------------------------|------------------------------|-------------------------------------|
| acenaphthene | 4-chlorophenyl phenyl ether | chrysene |
| acrolein | 4-bromophenyl phenyl ether | acenaphthylene |
| acrylonitrile | bis(2-chloroisopropyl) ether | anthracene |
| benzene | bis(2-chloroethoxy) methane | 1,12-benzoperylene |
| benzidine | methylene chloride | fluorene |
| carbon tetrachloride | methyl chloride | phenanthrene |
| chlorobenzene | methyl bromide | 1,2,5,6-dibenzanthracene |
| 1,2,4-trichlorobenzene | bromoform | indeno(1,2,3-cd)pyrene |
| hexachlorobenzene | dichlorobromomethane | pyrene |
| 1,2-dichloroethane | chlorodibromomethane | tetrachloroethylene |
| 1,1,1-trichloroethane | hexachlorobutadiene | toluene |
| hexachloroethane | hexachlorocyclopentadiene | trichloroethylene |
| 1,1-dichloroethane | isophorone | vinyl chloride |
| 1,1,2-trichloroethane | naphthalene | aldrin |
| 1,1,2,2-tetrachloroethane | nitrobenzene | dieldrin |
| chloroethane | 2-nitrophenol | chlordan |
| bis(2-chloroethyl)ether | 4-nitrophenol | 4,4-DDT |
| 2-chloroethyl vinyl ether | 2,4-dinitrophenol | 4,4-DDE |
| 2-chloronaphthalene | 4,6-dinitro-o-cresol | 4,4-DDD |
| 2,4,6-trichlorophenol | n-nitrosodimethylamine | alpha-endosulfan |
| parachlorometa cresol | n-nitrosodiphenylamine | beta-endosulfan |
| chloroform | n-nitrosodi-n-propylamine | endosulfan sulfate |
| 2-chlorophenol | pentachlorophenol | endrin |
| 1,2-dichlorobenzene | phenol | endrin aldehyde |
| 1,3-dichlorobenzene | bis(2-ethylhexyl) phthalate | heptachlor |
| 1,4-dichlorobenzene | butyl benzyl phthalate | heptachlor epoxide |
| 3,3-dichlorobenzidine | di-n-butyl phthalate | alpha-BHC <u>a/</u> |
| 1,1-dichloroethylene | di-n-octyl phthalate | beta-BHC |
| 1,2-trans-dichloroethylene | diethyl phthalate | gamma-BHC |
| 2,4-dichlorophenol | dimethyl phthalate | delta-BHC |
| 1,2-dichloropropane | 1,2-benzanthracene | PCB-1242 <u>b/</u> |
| 1,3-dichloropropylene | benzo(a)pyrene | PCB-1254 |
| 2,4-dimethylphenol | 3,4-benzofluoranthene | PCB-1221 |
| 2,4-dinitrotoluene | 11,12-benzofluoranthene | PCB-1232 |
| 2,6-dinitrotoluene | | PCB-1248 |
| 1,2-diphenylhydrazine | | PCB-1260 |
| ethylbenzene | | PCB-1016 |
| fluoranthene | | Toxaphene |
| | | 2,3,7,8-tetrachlorodibenzo-p-dioxin |

a/ hexachlorocyclohexane

b/ polychlorinated biphenyls